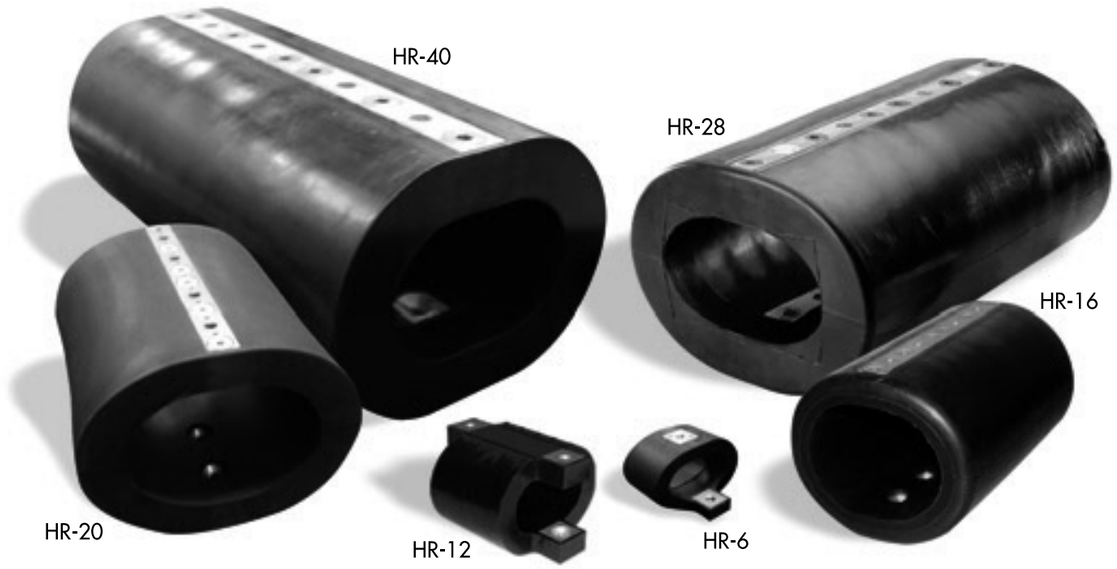
Overview

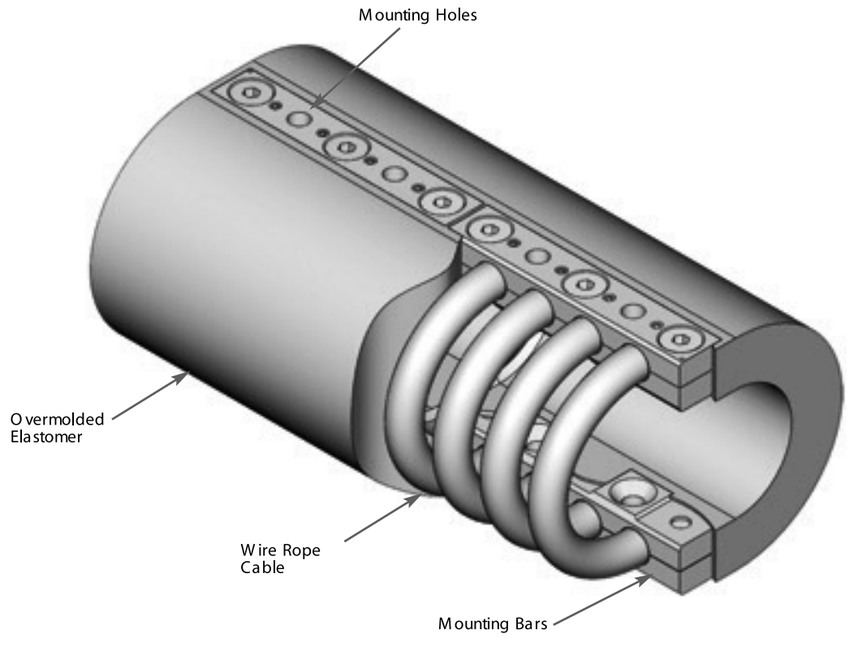


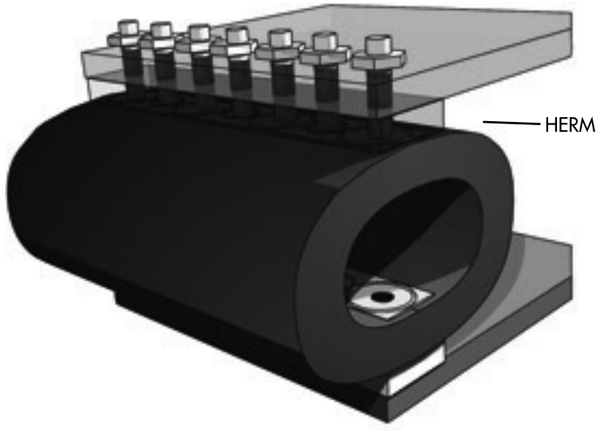
The HERM isolator incorporates the use of a traditional Enidine helical wire rope isolator encased in a proprietary elastomeric compound. The stainless steel cable of the mount provides for a rugged construction, while the elastomer provides additional damping and stiffness. This unique design results in a fail safe mount with a higher stiffness and energy absorption capacity.

The mount is readily scalable and performance easily tuned by varying the wire diameter, loop size, number of loops and elastomeric properties. The HERM isolator has proven particularly strong in low natural frequency ìsoft deckî applications of 12-16 Hz, reducing output Gís to below 15Gís. Its sealed nature of construction also provides for easy NBC washdown. Since the mounting size of the HERM isolator is virtually identical to that of standard wire rope isolators used in many shipboard applications, equipment upgrades are both simple and seamless with drop-in replacement capability.

HERM (HIGH ENERGY ROPE MOUNT)
HR6-HR40 Series

Overview





HERM Features:

- Lowest profile design for a 14 Hz deck solution
- A variety of material combinations available
- Mounting identical to traditional Wire Rope Isolators
- Readily ìtunableî to meet a wide range of natural frequencies
- Greater load carrying capability

HERM Benefits:

- Easy retrofit on fielded equipment
- Fewer mounts required to support a given load
- Smaller ìfootprintî than other mounts
- Compatible with NBC wash down requirements
- Improved noise attenuation compared to standard Wire Rope Isolators

Overview

Materials and Finishes:

Standard: Elastomer: Proprietary Enidine Compound
Wire Rope: 302/304 Stainless Steel
Mount Bars: 6061-T6 Aluminum, Chemical Conversion Coated per MIL-C-5541, Class 1A
Hardware: Alloy Steel per ASTM F835, Zinc Plated (HR16, HR20, HR28 and HR40)

Optional: Mount Bars: 6061-T6 Aluminum, Anodized per MIL-A-8625, Type II, Class 1
302/304 Stainless Steel per ASTM A276, Passivated
Hardware: 302/304 Stainless Steel (when stainless steel bars are specified)

Special: Consult Enidine

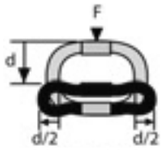
Isolator Options:

Mounting: Enidine offers various mounting combinations of thru-hole, countersunk, and threaded bars depending upon the HERM model selected.
Consult Enidine if a preferred mounting configuration is not listed.

Performance:

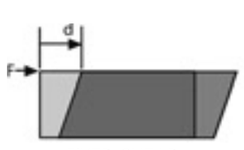
Stiffness (Kv or Ks):
HERMís exhibit non-linear stiffness behavior. Small deflections, usually associated with vibration isolation, will have a different spring rate than larger shock deflections. Enidine publishes typical vibration stiffness values (Kv), and average shock stiffness values (Ks) within the catalog. These values can be used with the provided equations listed on Page 54 to predict system performance.

Isolator Axes:
HERM are multi-axis isolators. The diagram below includes load axis definitions and deflection considerations.



COMPRESSION

45 COMPRESSION/ROLL

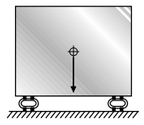


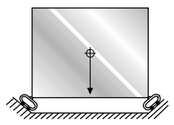
FIXED SHEAR

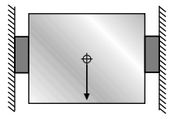
FIXED ROLL

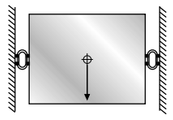
Damping: Typically 15-25%, depending on size and input level. For specific damping considerations, please consult Enidine.

Mounting Orientation:
The diagrams below illustrate typical mounting orientations.


COMPRESSION


45 COMPRESSION/ROLL


FIXED SHEAR


FIXED ROLL

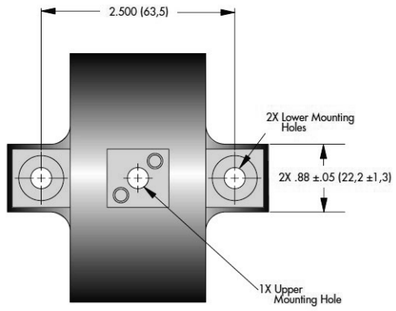
Stabilizers:
Stabilizers are used to control deflections of tall supported masses. Stabilizers are typically recommended when the height equals 2-times the width or depth dimension.

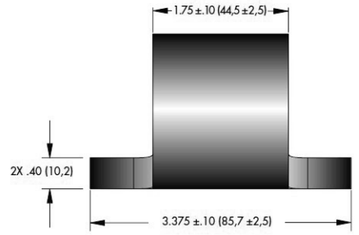
Application Worksheet

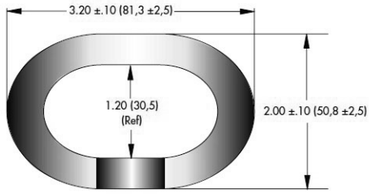
APPLICATION WORKSHEET - INPUTS IMPERIAL/METRIC

	IMPERIAL	METRIC
PART I: SYSTEM DATA:		
1. Total Supported Load (WT) : $W_T =$ _____ lbs. $W_T =$ _____ Kg x 9.81 = _____ N		
2. Number of Isolators (n) : $n =$ _____		
3. Static Load per Isolator (W): $W = \frac{W_T}{n}$ *** Assumes a central CG**	W = _____ lbs.	W = _____ N
4. Load Axis: Compression Shear or Roll 45° Compression/Roll	Load Axis _____	Load Axis _____
PART II: VIBRATION SIZING:		
1. Input Excitation Frequency $(\dot{E}_i) =$ _____ Hz $\left(= \frac{rpm}{60}\right)$		
2. System Response Natural Frequency for 80% isolation : $\dot{E}_n = \frac{\dot{E}_i}{3.0}$ = _____Hz		
3. Maximum Isolator Vibration Stiffness: (K_V) $K_v = \frac{W(2\ \dot{E}_n)^2}{g}$ $g = 386$ in/sec^2 or 9.81 m/sec^2	$K_v =$ _____ lbs./in.	$K_v =$ _____ N/m
4. Select an isolator by comparing calculated values with technical data for the desired load axis provided in tables for each isolator. a.) Calculated "W" must be less than the isolator's max static load and b.) Isolator's vibration stiffness must be less than the calculated maximum K		
PART III: SHOCK SIZING:		
1. Maximum Allowable Transmitted Acceleration: $A_T =$ _____Gís		
2. Shock Input Velocity: $V =$ _____ in./sec. or $V =$ _____ m/sec.		
Free Fall Impact: $V = \sqrt{2gh}$ g = 386 in./sec.^{2} or 9.81 m/sec.^{2} h = Drop Height (in. or m)		
3. Mn. Isolator Response Deflection: $D_{min} = \frac{V^2}{g(A_T)}$	$D_{min} =$ _____in.	$D_{min} =$ _____m
4. Maximum Isolator Shock Stiffness: $K_s = \frac{W(V/D_{min})^2}{g}$	$K_s =$ _____lbs./in.	$K_s =$ _____N/m
5. **Select an isolator by comparing calculated values with technical data for the desired load axis provided in tables for each isolator. a.) Calculated "W" must be less than the isolator's max static load and b.) Calculated D_{min} must be less than the isolator's max deflection Note: Metric deflections are calculated in meters (m) and technical data is in millimeters (mm). and c.) Isolator's shock stiffness must be less than calculated maximum "K_s"**		
6. Check actual deflection using "K_s" from technical data to ensure that the isolator's max deflection is not exceeded. $D_{actual} = \sqrt{\frac{V}{\frac{K_s(Isolator)g}{W}}}$	$D_{actual} =$ _____in.	$D_{actual} =$ _____m
7. If isolator's max deflection is exceeded, select another isolator and repeat steps 5 and 6.		

Technical Data







Note: Dimensions are in inches (mm) Tolerances are ± .010 (± .25mm)

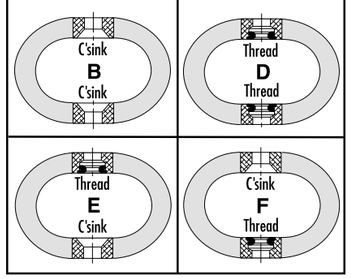
Size	Unit Weight Lbs. (Kg)	Mounting Options	Thru Hole in. (mm)	Thread in. (mm)	C'sink Imperial (Metric)
HR6-600	0.4 (0,2)	B, D, E, F	∅.272 (∅6,9)	#1/4-20 UNF (M6 X 1,0)	82° (90°)
HR6-400	0.4 (0,2)				
HR6-200	0.4 (0,2)				

Model Number Ordering Code

HR6 - 200 - B L M P

- Mount Bar Options: *[ ] - 6061-T6 Aluminum (or Equiv.) Chem Conv. Coated
  [Y] - 6061-T6 Aluminum (or Equiv.) Anodized
  [P] - 302/304 Stainless Steel (or Equiv.) Passivated
- Add "M" for Metric — All Mounting Options
- Threaded Hole Options: [H] - Helical, Free Running
  [L] - Helical, Locking, Dry Film Lubricated
- Mounting Options: See Chart
- Isolator Model: See Sizing Table

Mounting Options

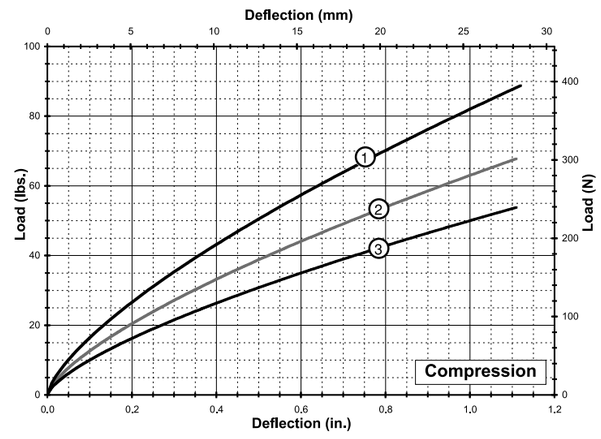


- Meets environmental requirements of MIL-M-17185A

*Standard features. Any non-standard items may require longer lead times. Call for quotation.

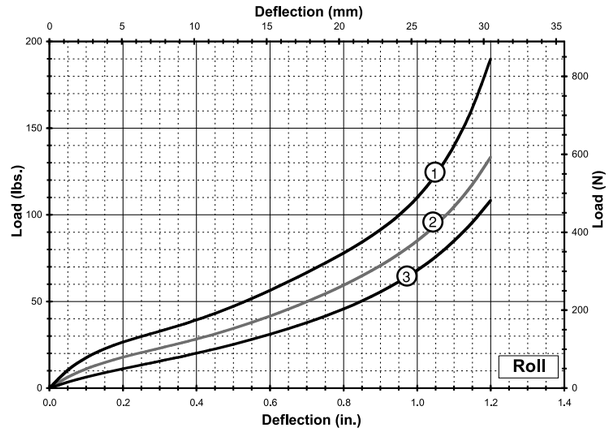
Technical Data

Static Load vs. Deflection



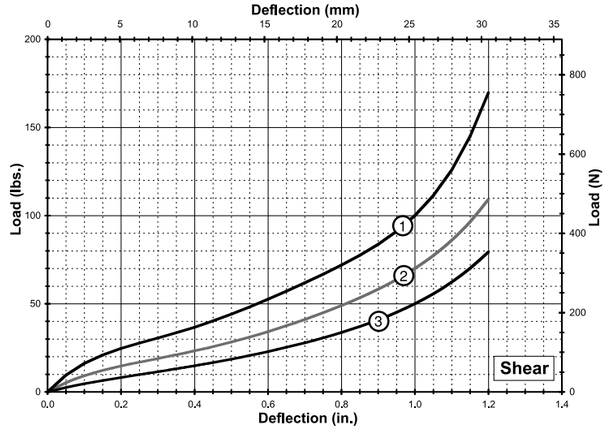
Compression

Curve	Model	Max Static Load Lbs. (N)	Max Deflection in. (mm)	Kv (vibration) Lbs./in. (kN/m)	Ks (shock) Lbs./in. (kN/m)
1	HR6-600	24 (107)	1.12 (28,4)	215 (38)	140 (25)
2	HR6-400	18 (80)	1.12 (28,4)	165 (29)	110 (19)
3	HR6-200	14 (62)	1.12 (28,4)	130 (23)	85 (15)



Roll

Curve	Model	Max Static Load Lbs. (N)	Max Deflection in. (mm)	Kv (vibration) Lbs./in. (kN/m)	Ks (shock) Lbs./in. (kN/m)
1	HR6-600	36 (160)	1.20 (30,5)	230 (40)	165 (29)
2	HR6-400	26 (116)	1.20 (30,5)	145 (25)	125 (22)
3	HR6-200	18 (80)	1.20 (30,5)	80 (14)	95 (17)

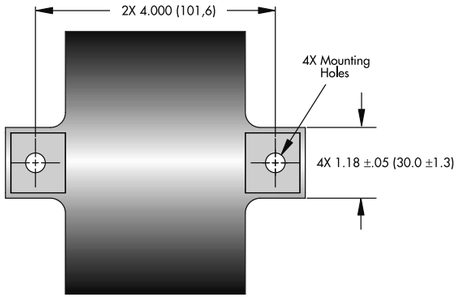


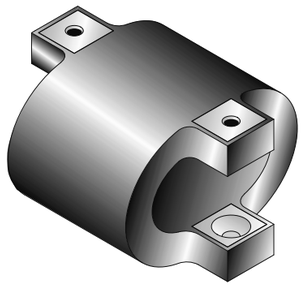
Shear

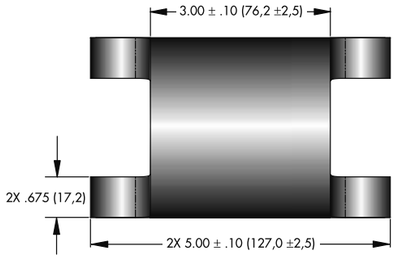
Curve	Model	Max Static Load Lbs. (N)	Max Deflection in. (mm)	Kv (vibration) Lbs./in. (kN/m)	Ks (shock) Lbs./in. (kN/m)
1	HR6-600	34 (151)	1.20 (30,5)	210 (37)	150 (26)
2	HR6-400	20 (89)	1.20 (30,5)	120 (21)	100 (18)
3	HR6-200	13 (58)	1.20 (30,5)	60 (11)	70 (12)

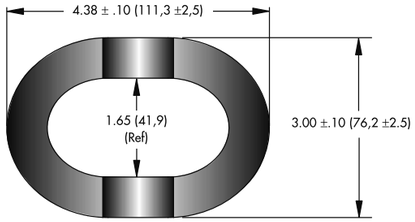
Note: Do not extrapolate plotted curves.

Technical Data









Note: Dimensions are in inches (mm) Tolerances are ± .010 (± .25mm)

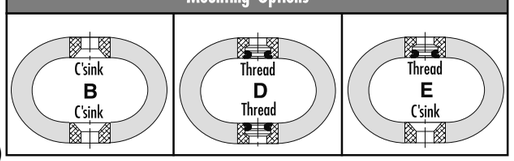
Size	Unit Weight Lbs. (Kg)	Mounting Options	Thru Hole in. (mm)	Thread in. (mm)	C'sink Imperial (Metric)
HR12-600	1.8 (0,8)	B, D, E	∅.328±005 (∅9,0±0,13)	#5/16-18 UNC (M8 X 1,25)	82° (90°)
HR12-400	1.8 (0,8) 1.7 (48)				
HR12-200	1.5 (0,8) 1.8 (51)				

Model Number Ordering Code

HR12 - 200 - B L M P

- Mount Bar Options: *[ ] - 6061-T6 Aluminum (or Equiv.) Chem Conv. Coated; [Y] - 6061-T6 Aluminum (or Equiv.) Anodized; [P] - 302/304 Stainless Steel (or Equiv.) Passivated
- Add "M" for Metric — All Mounting Options
- Threaded Hole Options: [H] - Helical, Free Running; [L] - Helical, Locking, Dry Film Lubricated
- Mounting Options: See Chart
- Isolator Model: See Sizing Table

Mounting Options

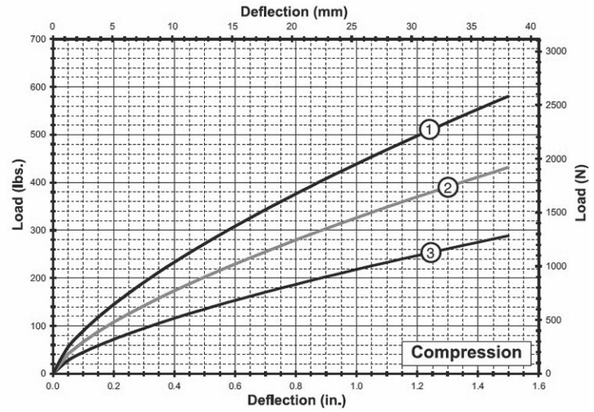


• Meets environmental requirements of MIL-M-17185A

*Standard features. Any non-standard items may require longer lead times. Call for quotation.

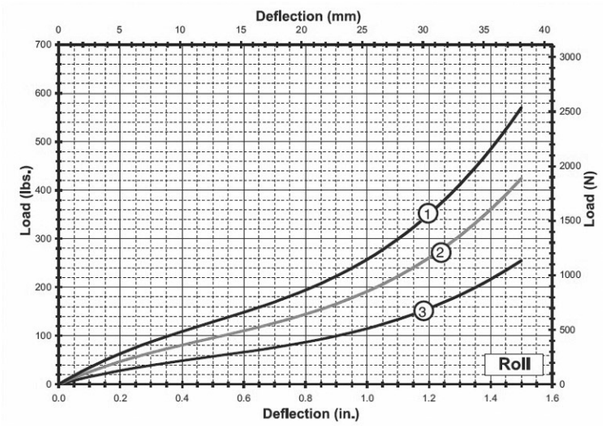
Technical Data

Static Load vs. Deflection



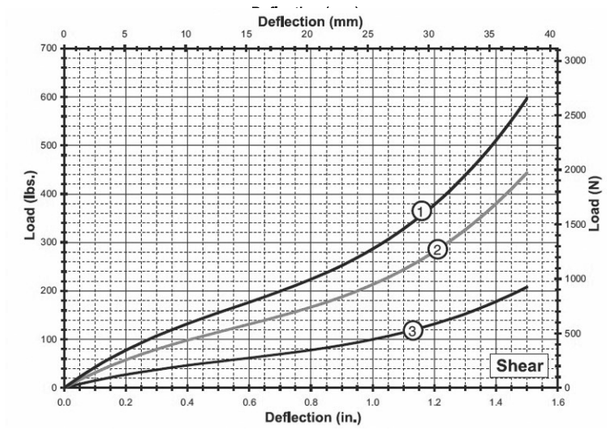
Compression

Curve	Model	Max Static Load Lbs. (N)	Max Deflection in. (mm)	Kv (vibration) Lbs./in. (kN/m)	Ks (shock) Lbs./in. (kN/m)
1	HR12-600	155 (689)	1.50 (38,1)	1,165 (204)	690 (121)
2	HR12-400	115 (512)	1.50 (38,1)	865 (151)	510 (89)
3	HR12-200	80 (356)	1.50 (38,1)	580 (102)	340 (60)



Roll

Curve	Model	Max Static Load Lbs. (N)	Max Deflection in. (mm)	Kv (vibration) Lbs./in. (kN/m)	Ks (shock) Lbs./in. (kN/m)
1	HR12-600	120 (534)	1.50 (38,1)	450 (79)	430 (75)
2	HR12-400	90 (400)	1.50 (38,1)	335 (59)	325 (57)
3	HR12-200	55 (245)	1.50 (38,1)	200 (35)	195 (34)

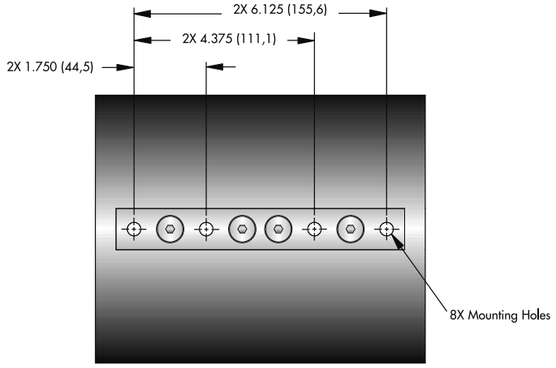


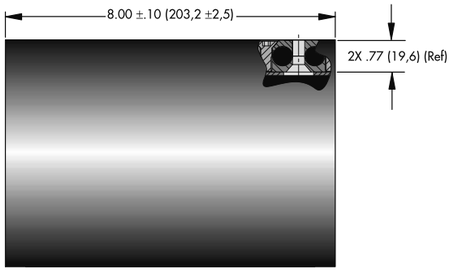
Shear

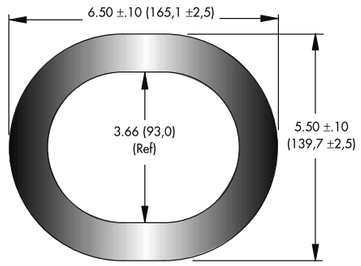
Curve	Model	Max Static Load Lbs. (N)	Max Deflection in. (mm)	Kv (vibration) Lbs./in. (kN/m)	Ks (shock) Lbs./in. (kN/m)
1	HR12-600	145 (645)	1.50 (38,1)	555 (97)	480 (84)
2	HR12-400	105 (467)	1.50 (38,1)	410 (72)	360 (63)
3	HR12-200	50 (222)	1.50 (38,1)	195 (34)	170 (30)

Note: Do not extrapolate plotted curves.

Technical Data







Note: Dimensions are in inches (mm) Tolerances are ± .010 (± .25mm)

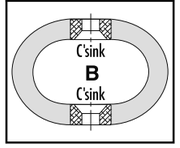
Size	Unit Weight Lbs. (Kg)	Mounting Options	Thru Hole in. (mm)	C'sink Imperial
HR16-606	8.8 (4,0)	B	∅.328 $^{\pm .005}_{\pm .015}$ (∅8,3 $^{\pm 0,13}_{\pm 0,38}$)	82°
HR16-406	7.5 (3,4)			
HR16-206	6.0 (2,7)			

Model Number Ordering Code

HR16 - 206 - B P

- Mount Bar Options: *[ ] - 6061-T6 Aluminum (or Equiv.) Chem Conv. Coated
  [Y] - 6061-T6 Aluminum (or Equiv.) Anodized
  [P] - 302/304 Stainless Steel (or Equiv.) Passivated
- Mounting Options: See Chart
- Isolator Model: See Sizing Table

Mounting Options

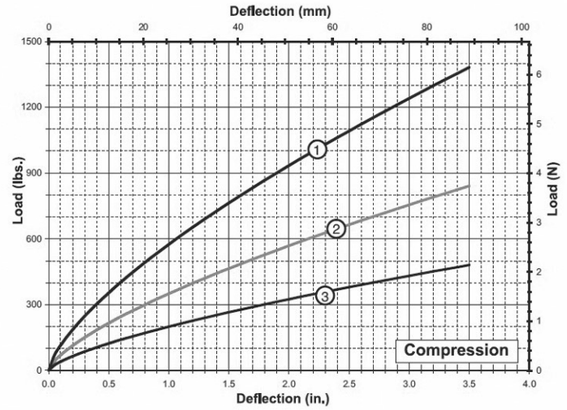


- Meets environmental requirements of MIL-M-17185A

*Standard features. Any non-standard items may require longer lead times. Call for quotation.

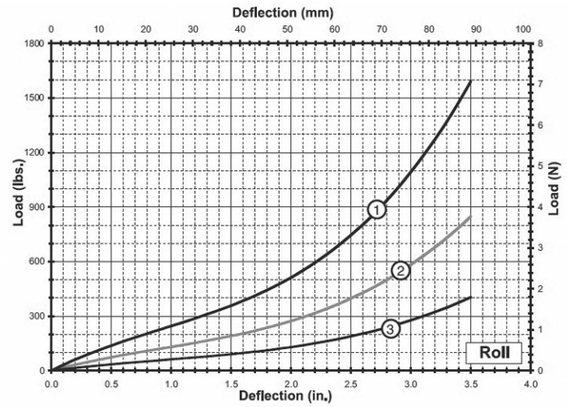
Technical Data

Static
Load vs. Deflection



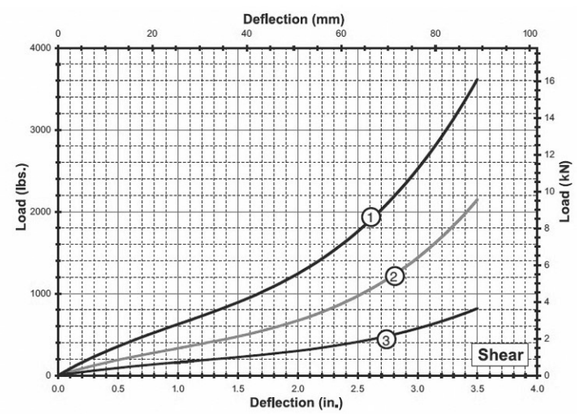
Compression

Curve	Model	Max Static Load Lbs. (N)	Max Deflection in. (mm)	Kv (vibration) Lbs./in. (kN/m)	Ks (shock) Lbs./in. (kN/m)
1	HR16-606	365 (1 624)	3.50 (88,9)	1,490 (261)	700 (123)
2	HR16-406	225 (1 001)	3.50 (88,9)	910 (159)	425 (74)
3	HR16-206	125 (556)	3.50 (88,9)	520 (91)	245 (43)



Roll

Curve	Model	Max Static Load Lbs. (N)	Max Deflection in. (mm)	Kv (vibration) Lbs./in. (kN/m)	Ks (shock) Lbs./in. (kN/m)
1	HR16-606	255 (1 134)	3.50 (88,9)	415 (73)	475 (83)
2	HR16-406	135 (601)	3.50 (88,9)	220 (39)	250 (44)
3	HR16-206	65 (289)	3.50 (88,9)	105 (18)	120 (21)

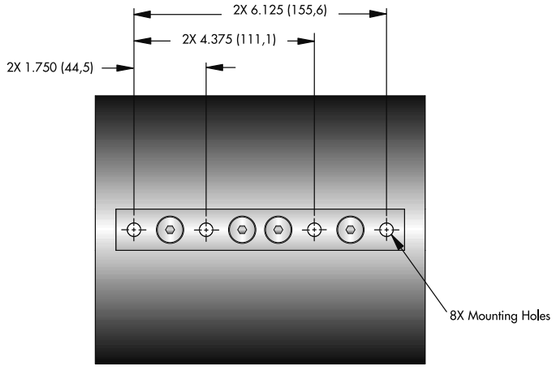


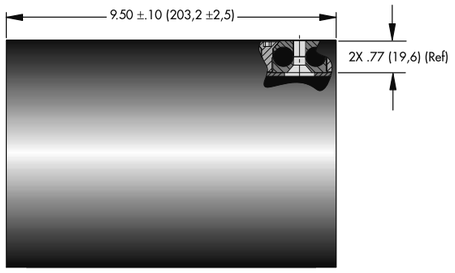
Shear

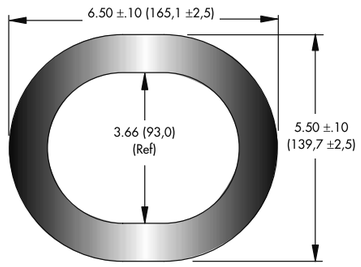
Curve	Model	Max Static Load Lbs. (N)	Max Deflection in. (mm)	Kv (vibration) Lbs./in. (kN/m)	Ks (shock) Lbs./in. (kN/m)
1	HR16-606	650 (2 891)	3.50 (88,9)	1,065 (187)	1,115 (195)
2	HR16-406	345 (1 535)	3.50 (88,9)	565 (99)	690 (121)
3	HR16-206	165 (734)	3.50 (88,9)	275 (48)	255 (45)

Note: Do not extrapolate plotted curves.

Technical Data







Note: Dimensions are in inches (mm) Tolerances are ± .010 (± .25mm)

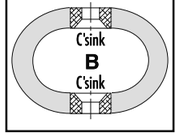
Size	Unit Weight Lbs. (Kg)	Mounting Options	Thru Hole in. (mm)	C'sink Imperial
HR16-600	10.5 (4,8)	B	∅.328 ± 005 ± 015 (∅8,3 ±0,13 ±0,38)	82°
HR16-400	9.0 (4,1)			
HR16-200	7.5 (3,4)			

Model Number Ordering Code

HR16 - 200 - B P

- Mount Bar Options: *[ ] - 6061-T6 Aluminum (or Equiv.) Chem Conv. Coated
  [Y] - 6061-T6 Aluminum (or Equiv.) Anodized
  [P] - 302/304 Stainless Steel (or Equiv.) Passivated
- Mounting Options: See Chart
- Isolator Model: See Sizing Table

Mounting Options

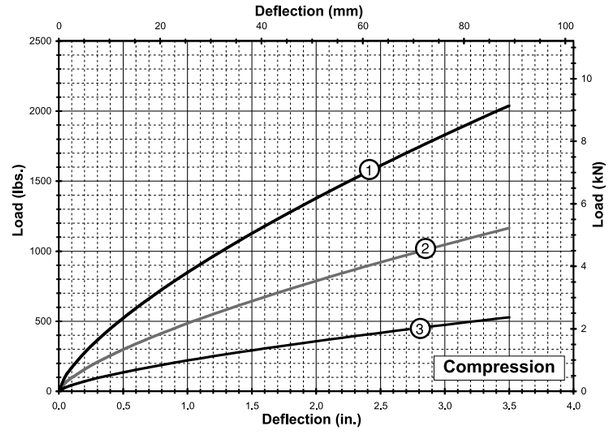


- Meets environmental requirements of MIL-M-17185A

*Standard features. Any non-standard items may require longer lead times. Call for quotation.

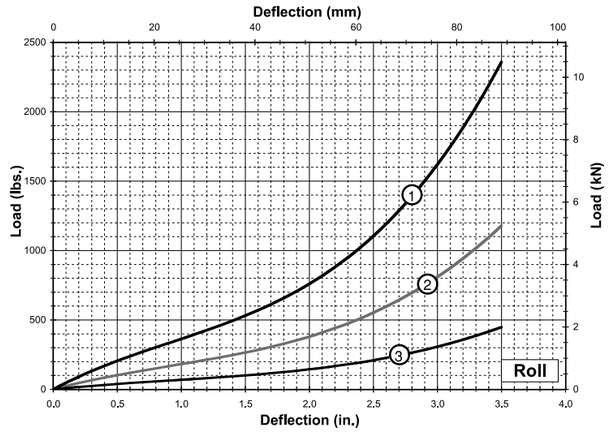
Technical Data

Static Load vs. Deflection



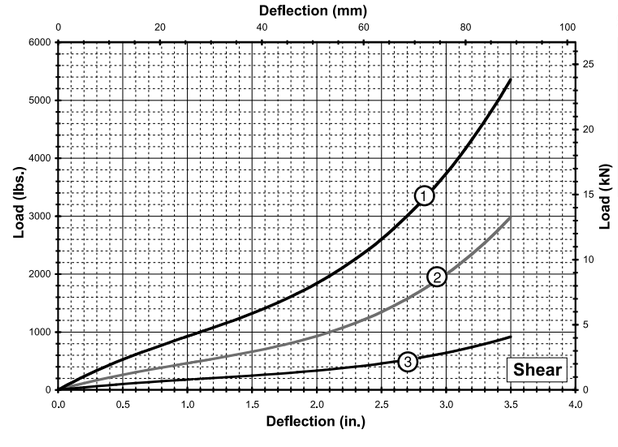
Compression

Curve	Model	Max Static Load Lbs. (N)	Max Deflection in. (mm)	Kv (vibration) Lbs./in. (kN/m)	Ks (shock) Lbs./in. (kN/m)
1	HR16-600	545 (2 424)	3.50 (88,9)	2,220 (389)	1,035 (181)
2	HR16-400	310 (1 379)	3.50 (88,9)	1,260 (221)	590 (103)
3	HR16-200	140 (623)	3.50 (88,9)	570 (100)	270 (47)



Roll

Curve	Model	Max Static Load Lbs. (N)	Max Deflection in. (mm)	Kv (vibration) Lbs./in. (kN/m)	Ks (shock) Lbs./in. (kN/m)
1	HR16-600	375 (1 668)	3.50 (88,9)	615 (108)	700 (123)
2	HR16-400	185 (823)	3.50 (88,9)	305 (53)	350 (61)
3	HR16-200	70 (311)	3.50 (88,9)	115 (20)	135 (24)

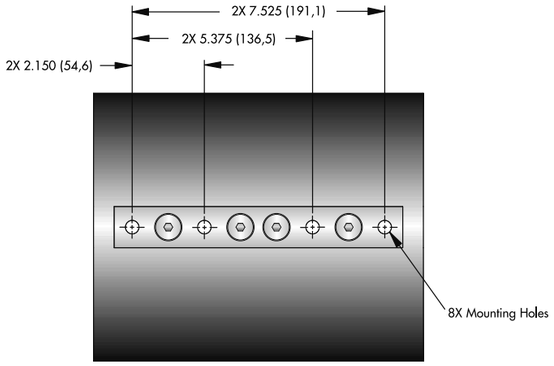


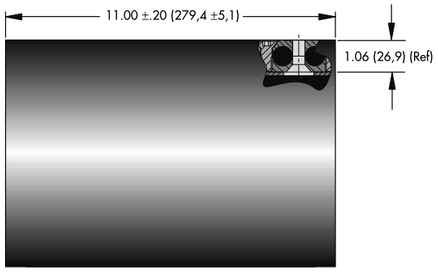
Shear

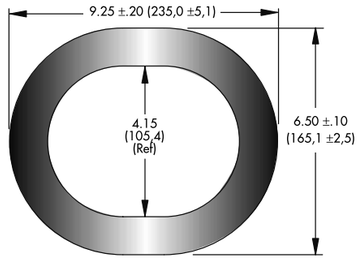
Curve	Model	Max Static Load Lbs. (N)	Max Deflection in. (mm)	Kv (vibration) Lbs./in. (kN/m)	Ks (shock) Lbs./in. (kN/m)
1	HR16-600	960 (4 270)	3.50 (88,9)	1,575 (276	1,655 (290)
2	HR16-400	480 (2 135)	3.50 (88,9)	790 (138)	870 (152)
3	HR16-200	185 (823)	3.50 (88,9)	305 (53)	295 (52)

Note: Do not extrapolate plotted curves.

Technical Data







Note: Dimensions are in inches (mm) Tolerances are ± .010 (± .25mm)

Size	Unit Weight Lbs. (Kg)	Mounting Options	Thru Hole in. (mm)	C'sink Imperial
HR20-600	21 (9,5)	B	∅.406 ± 005 ± 015 (∅10,3 ±0,13 ±0,38)	82°
HR20-400	18 (8,2)			
HR20-200	14 (6,4)			

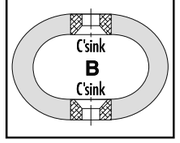
Model Number Ordering Code

HR20 - 200 - B P

- Mount Bar Options: *[ ] - 6061-T6 Aluminum (or Equiv.) Chem Conv. Coated
  [Y] - 6061-T6 Aluminum (or Equiv.) Anodized
  [P] - 302/304 Stainless Steel (or Equiv.) Passivated
- Mounting Options: See Chart
- Isolator Model: See Sizing Table

*Standard features. Any non-standard items may require longer lead times. Call for quotation.

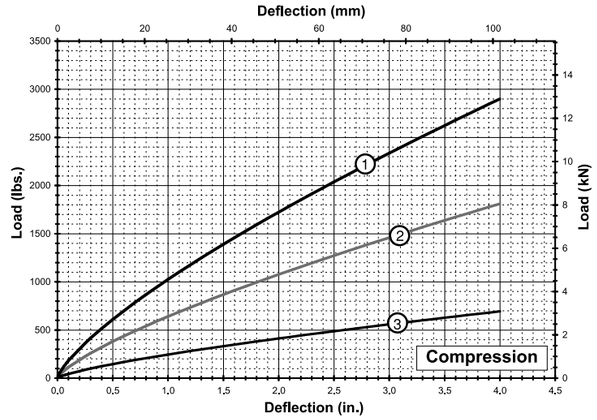
Mounting Options



- Meets environmental requirements of MIL-M-17185A

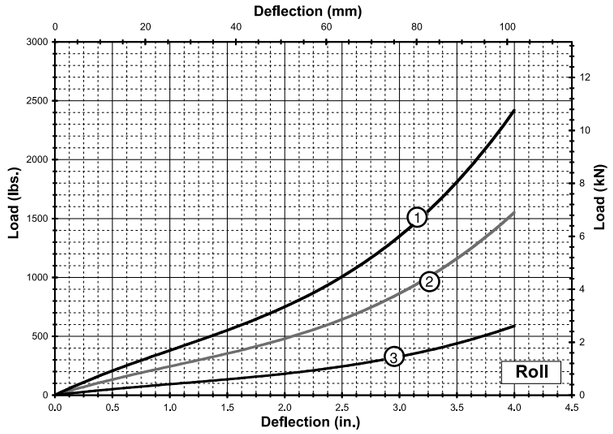
Technical Data

Static Load vs. Deflection



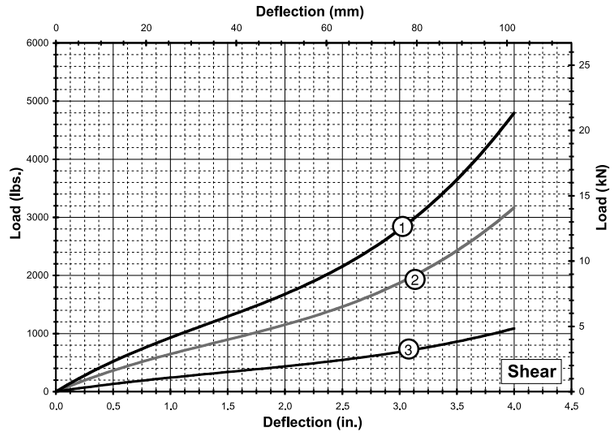
Compression

Curve	Model	Max Static Load Lbs. (N)	Max Deflection in. (mm)	Kv (vibration) Lbs./in. (kN/m)	Ks (shock) Lbs./in. (kN/m)
1	HR20-600	700 (3 114)	4.00 (101,6)	2,370 (415)	1,245 (218)
2	HR20-400	435 (1 935)	4.00 (101,6)	1,480 (259)	777 (136)
3	HR20-200	165 (734)	4.00 (101,6)	565 (99)	295 (52)



Roll

Curve	Model	Max Static Load Lbs. (N)	Max Deflection in. (mm)	Kv (vibration) Lbs./in. (kN/m)	Ks (shock) Lbs./in. (kN/m)
1	HR20-600	360 (1 601)	4.00 (101,6)	590 (103)	675 (118)
2	HR20-400	230 (1 023)	4.00 (101,6)	380 (67)	435 (76)
3	HR20-200	90 (400)	4.00 (101,6)	145 (25)	165 (29

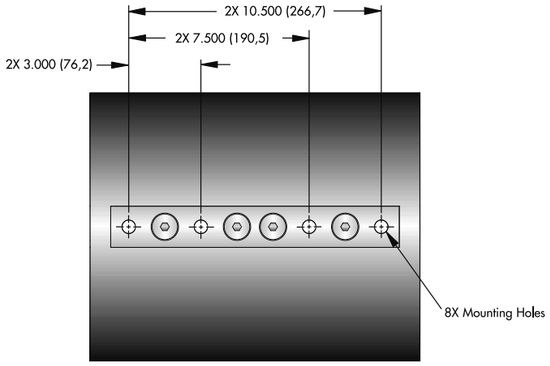


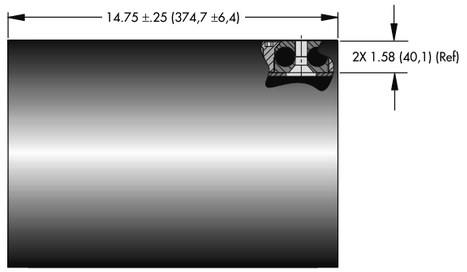
Shear

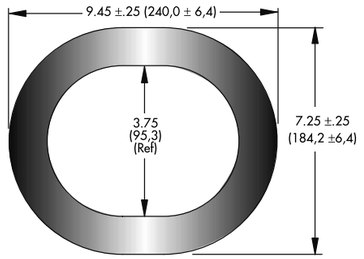
Curve	Model	Max Static Load Lbs. (N)	Max Deflection in. (mm)	Kv (vibration) Lbs./in. (kN/m)	Ks (shock) Lbs./in. (kN/m)
1	HR20-600	925 (4 115)	4.00 (101,6)	1,515 (265)	1,440 (252)
2	HR20-400	645 (2 869)	4.00 (101,6)	1,060 (186)	970 (170)
3	HR20-200	230 (1 023)	4.00 (101,6)	380 (67)	355 (62)

Note: Do not extrapolate plotted curves.

Technical Data







Note: Dimensions are in inches (mm) Tolerances are ± .010 (± .25mm)

Size	Unit Weight Lbs. (Kg)	Mounting Options	Thru Hole in. (mm)	C'sink Imperial
HR28-600	50 (23)	B	∅.531 $^{+.005}_{-.015}$ (∅13,5 $^{+0,13}_{-0,38}$)	82°
HR28-400	40 (18)			
HR28-200	30 (14)			

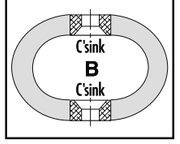
Model Number Ordering Code

HR28 - 200 - B P

- Mount Bar Options: *[ ] - 6061-T6 Aluminum (or Equiv.) Chem Conv. Coated
  [Y] - 6061-T6 Aluminum (or Equiv.) Anodized
  [P] - 302/304 Stainless Steel (or Equiv.) Passivated
- Mounting Options: See Chart
- Isolator Model: See Sizing Table

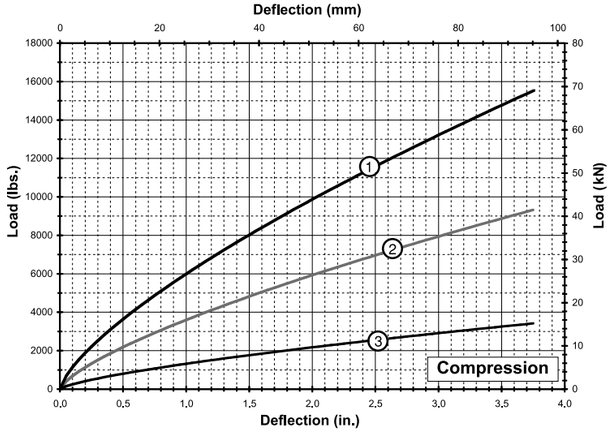
*Standard features. Any non-standard items may require longer lead times. Call for quotation.

Mounting Options



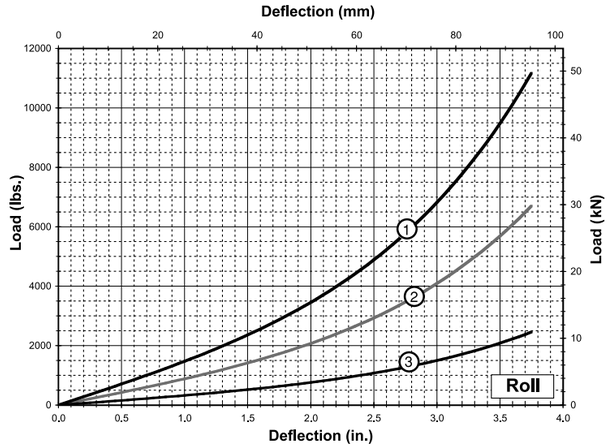
Technical Data

Static Load vs. Deflection



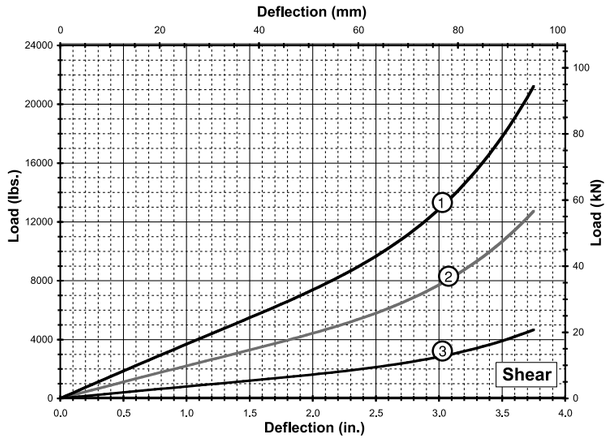
Compression

Curve	Model	Max Static Load Lbs. (N)	Max Deflection in. (mm)	Kv (vibration) Lbs./in. (kN/m)	Ks (shock) Lbs./in. (kN/m)
1	HR28-600	4,000 (17,79)	3.75 (95,3)	14,865 (2 603)	7,230 (1 266)
2	HR28-400	2,375 (10,56)	3.75 (95,3)	8,920 (1 562)	4,335 (759)
3	HR28-200	870 (3,87)	3.75 (95,3)	3,270 (573)	1,590 (278)



Roll

Curve	Model	Max Static Load Lbs. (N)	Max Deflection in. (mm)	Kv (vibration) Lbs./in. (kN/m)	Ks (shock) Lbs./in. (kN/m)
1	HR28-600	1,110 (4,94)	3.75 (95,3)	1,820 (319)	3,135 (549)
2	HR28-400	670 (2,98)	3.75 (95,3)	1,095 (192)	1,880 (329)
3	HR28-200	245 (1,09)	3.75 (95,3)	400 (70)	690 (121)

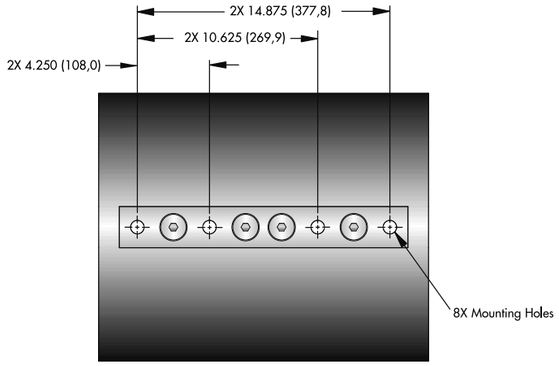


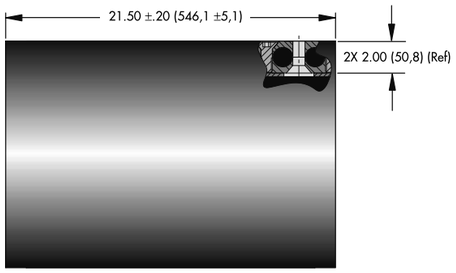
Shear

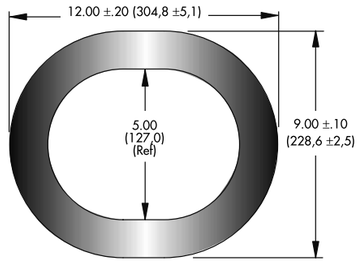
Curve	Model	Max Static Load Lbs. (N)	Max Deflection in. (mm)	Kv (vibration) Lbs./in. (kN/m)	Ks (shock) Lbs./in. (kN/m)
1	HR28-600	2,980 (13,26)	3.75 (95,3)	4,875 (854)	6,315 (1 106)
2	HR28-400	1,790 (7,96)	3.75 (95,3)	2,925 (512)	3,790 (664)
3	HR28-200	655 (2,91)	3.75 (95,3)	1,070 (187)	1,395 (244)

Note: Do not extrapolate plotted curves.

Technical Data







Note: Dimensions are in inches (mm) Tolerances are ± .010 (± .25mm)

Size	Unit Weight Lbs. (Kg)	Mounting Options	Thru Hole in. (mm)	C'sink Imperial
HR40-600	100 (45)	B	∅.781 $^{+.005}_{-.015}$ (∅19,8 $^{+0,13}_{-0,38}$)	82°
HR40-400	83 (38)			
HR40-200	67 (30)			

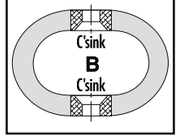
Model Number Ordering Code

HR40 - 200 - B P

- Mount Bar Options: *[ ] - 6061-T6 Aluminum (or Equiv.) Chem Conv. Coated
  [Y] - 6061-T6 Aluminum (or Equiv.) Anodized
  [P] - 302/304 Stainless Steel (or Equiv.) Passivated
- Mounting Options: See Chart
- Isolator Model: See Sizing Table

*Standard features. Any non-standard items may require longer lead times. Call for quotation.

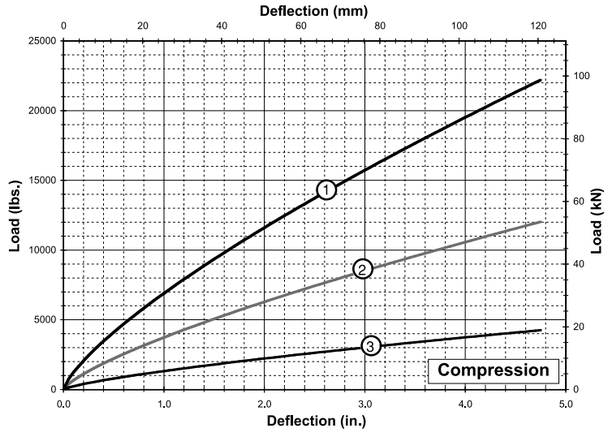
Mounting Options



- Meets environmental requirements of MIL-M-17185A

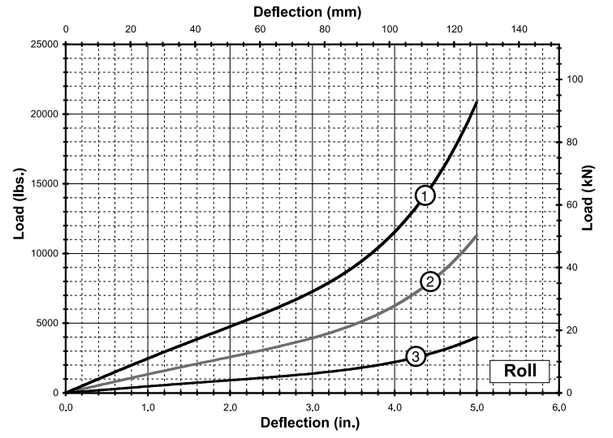
Technical Data

Static
Load vs. Deflection



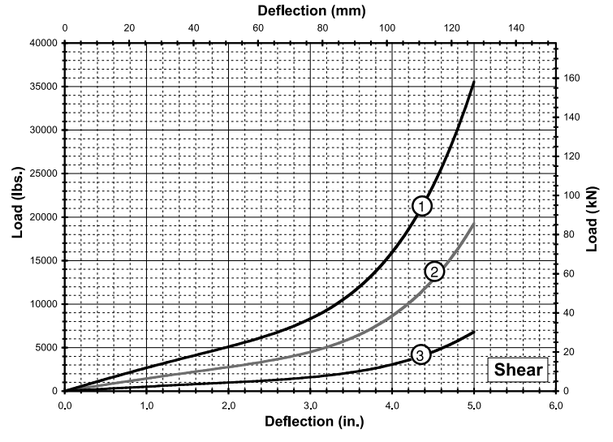
Compression

Curve	Model	Max Static Load Lbs. (N)	Max Deflection in. (mm)	Kv (vibration) Lbs./in. (kN/m)	Ks (shock) Lbs./in. (kN/m)
1	HR40-600	5,350 (23,80)	4.75 (120,7)	15,950 (2 793)	8,010 (1 403)
2	HR40-400	2,900 (12,90)	4.75 (120,7)	8,640 (1 513)	4,340 (760)
3	HR40-200	1,025 (4,56)	4.75 (120,7)	3,055 (535)	1,535 (269)



Roll

Curve	Model	Max Static Load Lbs. (N)	Max Deflection in. (mm)	Kv (vibration) Lbs./in. (kN/m)	Ks (shock) Lbs./in. (kN/m)
1	HR40-600	2,000 (8,90)	5.00 (127)	3,275 (574)	4,330 (758)
2	HR40-400	1,085 (4,83)	5.00 (127)	1,775 (311)	2,440 (427)
3	HR40-200	385 (1,71)	5.00 (127)	630 (110)	850 (149)



Shear

Curve	Model	Max Static Load Lbs. (N)	Max Deflection in. (mm)	Kv (vibration) Lbs./in. (kN/m)	Ks (shock) Lbs./in. (kN/m)
1	HR40-600	2,190 (9,74)	5.00 (127)	3,585 (628)	5,780 (1 012)
2	HR40-400	1,190 (5,29)	5.00 (127)	1,945 (341)	3,145 (551)
3	HR40-200	420 (1,87)	5.00 (127)	685 (120)	1,080 (189)

Note: Do not extrapolate plotted curves.

WEAR™ Restraints

Overview

WEAR™ (Wire Energy Absorbing Rope) pipe restraints are uniquely packaged wire rope isolators designed to protect structures from steady state vibration and isolate them from seismic and dynamic loads. These new generation energy absorbing restraints feature simple construction. There are no oils, seals or complex moving parts required to perform their function. The design has eliminated the problems often associated with hydraulic or mechanical restraints which are complex and prone to failure.

The Wire Rope Isolator, which is the basic element of the technology has been successfully used by the military for more than 25 years. As a result, it conforms to government and military quality control requirements. The restraint is thus exempt from surveillance testing. In-place visual inspection is all that is required to assure operability. The WEAR™ can be provided with a wide range of piping accessories and can be supplied to ISO 9001, Mil-Q, Mil-I, B31.1 or ASME Section III subsection NF.

Options Available

Various end connections are available to meet existing hardware such as Bergen Paterson, Basic Engineers, PSA, Grinnel and others. For sizing or specific application information, call your local representative or Enidine directly.

Typical Applications

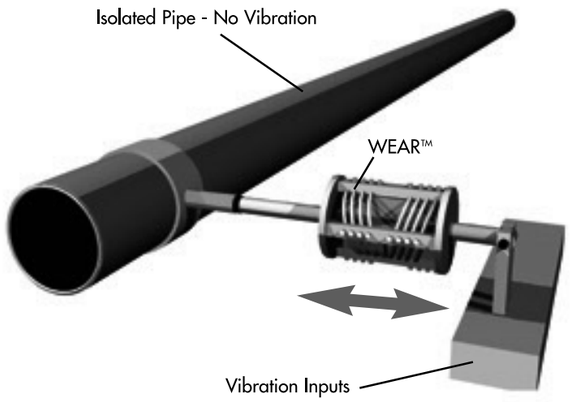
- Pipe Restraint
- Hydraulic Transients
- Power Generating Plants
- Chemical Plants
- Seismic Restraints
- Steady State Vibration
- Nuclear Plants
- Refineries
- Structural Vibration
- Wind Loading
- Pulp and Paper Mills

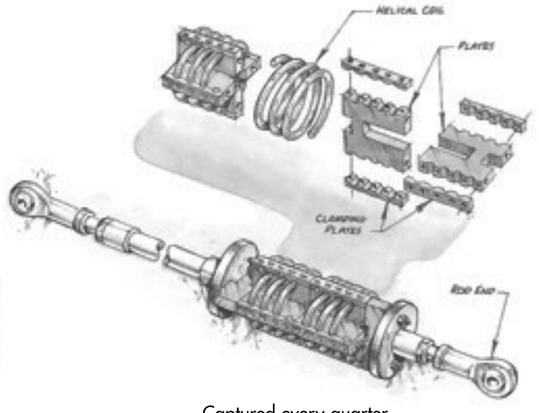
WEAR™ Benefits

- Repeatable
- Environmentally Stable
- Low Structural Loading
- Dissipate Energy
- Wide Operating Temperature Range
- Proven Technology
- Simple Construction
- Corrosion Resistant
- High Cycle Fatigue Life
- No Maintenance

Environmental Conditions

Normal Temperature:	-40∫F to 200∫F/-40∫C to 100∫C
Faulted Temperature:	-40∫F to 350∫F/-40∫C to 175∫C
Humidity:	100% RH
Radiation:	1 x 10^9 RAD
Pressure:	-14.7 psi to 100 psi 0 atm to 7 atm





Captured every quarter loop, wire rope coil will not collapse; two-pitch design prevents twisting.

Wire Mesh Isolator

Overview

Wire Mesh Isolators

Wire mesh material can be manufactured in a multitude of shapes and sizes to accommodate your specific application. When exercised, the wire mesh damping elements convert input energy to heat. Friction is created when knitted or woven stainless steel wire strands are displaced relative to one another. Knitted metals have inherent resiliency and provide high-damping characteristics and non-linear spring rates.

Wire Mesh Isolator

Wire Mesh Isolator Features:

- Wide operating temperature range
- Long service life
- Environmental compatibility
- Maintenance-free operation
- Custom sizes and shapes available

Wire Mesh Isolator Typical Applications:

- Auxiliary Power Units
- Engines
- Communications Equipment
- Medical Equipment
- Sensitive Mobile Electronics

Material Development:

If your application parameters fall outside of the standard product line, you can be sure that Enidine has the engineering capabilities and resources to design, test and recommend a custom solution to suit your specific needs:

- 3D Modeling
- System Analysis (Modal, Linear/Non-Linear, Dynamic Analysis and Simulation, Finite Element, Shock and Vibration)
- In-house test facility for prototypes and production models: Static Load/Deflection, Life Cycle, Vibration Frequency, Dynamic Load, Random Input and High Frequency Noise
- AS-9100 Certified
- ISO 9001 Certified